

Beginner's Guide to Low Power Broadcasting

Avoiding Busts

As mentioned in the "Is it Legal?" chapter, there are many forms of low power broadcasting. Some of them are legal in some countries and illegal in others. This chapter is addressed to people who do open-air broadcasting without a license, using more power than the rules in their country permit for unlicensed stations.

the hunter's tools

When the authorities get around to sending one of their direction-finding (DF) vehicles into your area, it's easy for them to find your transmitter. Disguising your antenna or telling lies about your location on the air will not help you. Modern DF equipment quickly and efficiently leads the authorities directly to the source of your signal. Many broadcast engineers, ham radio operators, and avid radio listeners are also equipped with DF gear or have figured out ways to find transmitters by using receivers that have fairly directional antennas on them.

By the way, the direction-finding vehicles used by most governments look like ordinary cars from the outside. They are not big obvious vans covered with lots of rotating antennas!

If a station is not located in an area that has a government field office nearby, the feds will have to schedule a time when they can send a DF vehicle into the area, and they will usually try to gather information about 2 or 3 stations on each trip. Stations that operate on a predictable schedule or on a 24-hour basis are much easier to find than unpredictable stations.

guerilla tactics

If you operate an illegal station 7 days a week from a fixed location, you **will** eventually get busted in most countries, unless you get bored with the project and quit broadcasting before they get around to working on your case. You have to be willing to put some effort into the project if you want to stay on the air for a long time.

Some "pirates" in Europe have used the following approach to avoiding the authorities: they put a battery pack, a transmitter, and a taped program on a roof-top or hill-top and leave it unattended during the broadcast. If the authorities find the transmitter, they cannot jail or fine the broadcaster -- unless they catch him when he comes back to retrieve his equipment, or find his fingerprints on the gear. Technically adept broadcasters have used timers to turn their transmitters on and off when the station personnel are at a safe distance, and have wired up motion detectors to turn off the transmitters when people get near them.

Another related tactic is to put the transmitter on a property that is not associated with the station operators, and use a microwave link to feed audio from the studio to the transmitter. If the main transmitter is rigged to go off the air when intruders approach it, and if the microwave link is rigged to turn off when the main transmitter goes off, it is almost impossible for the authorities to find the studio. Microwave beams can be very narrow and in some cases the authorities would have to rent a helicopter to follow the beam back to its source. Consider this excerpt from the UK edition of Simon Reynolds' book *Energy Flash: A Journey through Rave Music and Dance Culture* (Picador Books, 1997):

...It's fairly easy for the DTI to track a transmission back to its source, by "triangulating" the signal. Since the early Eighties, most pirate stations have circumvented this problem by using a microwave transmitter to "beam" their programmes from the studio to a remote transmitter, where it is then broadcast to the public. Because these micro-links operate by a line-of-sight directional beam, the DTI can trace the signal back to the pirate studio only once they've got to the top of the tower block and located the transmitter... All the pirate station loses in the raid is a transmitter worth a few hundred pounds. The pirate can then switch its micro-link beam to a back-up transmitter at the top of another building.

The communications authorities in many countries have gotten used to the comfort of their air-conditioned cars and vans, and much of their DF equipment is built into their vehicles. They are very reluctant to hike through forests, swim to islands, or climb rocky hills to reach unauthorized transmitters. If you put your transmitter in a place that cannot be reached by automobile, you greatly reduce your odds of getting busted.

Transmitting from a location where nobody can approach you without being seen will work, but the broadcaster must constantly keep a lookout. Cap'n Crunch tells this story of his California days:

"I built a small transistorized 65 watt FM transmitter and put a pair of turntables and mixer board in my VW van and drove up to Mt Uminum or Lick Observatory and broadcast from there. Eventually the FCC van (actually a white un-marked station wagon with Government plates) was spotted on the way up the mountain.... we were notified of our expected 'visitors' and stayed on the air as we watched the car weaving around the bends. Just as it rounded the last bend, we pulled in the antenna, and hid the transmitter and drove down and waved at the FCC as they were on their way up...."

In major cities where the broadcast bands are very crowded, unlicensed stations have set up informal agreements by which they share the few available channels. One station will operate on a channel on Friday nights, another will take it on Sunday afternoons, and so forth.

This strategy has the side-effect of giving a little protection to the stations involved. The authorities would have to keep a DF vehicle in the area for an entire week or two if they wanted to track down all the stations using a frequency. Depending on what else they have on their agenda, they might not be able to invest that much time.

Only being on the air one hour or a few hours a week is not as much fun as operating a 24/7 station. However, many European pirates have gotten a great deal of pleasure out of broadcasting a few hours each weekend at the same time, while taking various precautions, and have managed to build up devoted audiences who remember to tune them in each week (just as you and I remember which day our favorite TV show is on). I think Europeans are more likely to remember the days and times of radio shows than us Americans; we tend to use radio as a background music service. Still, I manage to tune in certain radio stations at certain times on the weekend to hear specialized programs that I'm interested in, and there must be at least a few other Americans who have the same level of interest. Is it better to have a station that's on the air one day a week and might survive for many years, or a station that's on the air every day but is likely to get busted within a few months?

being busted

So, what happens if the authorities catch an unlawful broadcaster? Like everything, it varies from country to country. In China, they probably shoot the broadcaster and bill his family for the bullet. In many European countries, it's usually a monetary fine for the first offence, with a possibility of a few months in jail for repeat offenders. In *alt.radio.pirate*, Geoff M. described the current situation in London as follows:

They will come if someone pays them to investigate you, or if you piss off one of the independents or the beeb, or if the DTI just decide to have one of their regular purges. You'll get your gear confiscated and a fine. If you keep doing it, you'll end up with a suspended sentence.

In the US, the process normally (but not always) goes like this: The FCC becomes aware of a violator. Usually they are notified by a licensed station, or they find the pirate station's page during one of their frequent searches of the worldwide web. They also have people all over the country looking for newspaper and magazine articles that reveal information about pirate broadcasts.

Next, two or three agents in a DF vehicle track down the station and measure the signal strength near the transmit antenna. Then they knock on the door and ask to inspect the station. If allowed in, they will attempt to get the station operator's identity, they will demand that the station be turned off, and they will ask that the transmitter be surrendered. (Often they will claim that no further action will be taken if the transmitter is handed over, but actually the field agents do not make that decision, and people who have given up their transmitters have sometimes been fined and prosecuted later.) If not allowed entry, the agents will angrily storm off, threatening to come back with a warrant. It might take them several hours or even several weeks to get the warrant, but they will be back.

It is very important to the FCC that they get the operator's identity. Their entire legal strategy depends on having a person's name so that they can extract a fine from him and request a permanent injunction against him, and they usually assume that a station is operated by a single person. They will use any means they can to get a name: license plates on vehicles, property ownership records, receipts in the trash can, whatever.

A station that is being operated by several people might be able to survive a bust simply by moving to another site, changing its name and being run by the surviving (non-busted) members of the group. When that happens, the FCC has to start its investigation all over again.

What happens after the FCC's first visit is a little unpredictable. Sometimes if the pirate stops broadcasting they never hear from the FCC again. Sometimes the FCC mails the operator a Notice of Apparent Liability indicating how large a fine is owed. Prior to the advent of the "micro broadcasting movement," in the mid-90's, the typical fine was \$750. Now it's \$11,000.

In some cases the FCC will also go to court and get a permanent injunction against the station operator, which can lead to draconian enforcement measures against him if he continues to broadcast. And frequently they come back later with federal marshals or local cops and forcibly confiscate the transmitter and other equipment.

People have tried to battle the FCC in court on first amendment and jurisdictional issues. So far, these efforts have failed. What you have to understand is this: the courts and the FCC are part of the **same** federal government. This government has two main goals: the gradual elimination of all freedoms in the United States, and turning over all natural resources including the radio spectrum to the big corporations.